

**I claim:**

1. An antenna system comprising:
  - (a) a transmission tower;
  - (b) a donor antenna mounted on the transmission tower;
  - (c) a signal processing device mounted on the transmission tower;
  - (d) a coverage antenna mounted on the transmission tower;
  - (e) a first cable connecting the donor antenna to the signal processing device; and
  - (f) a second cable connecting the signal processing device to the coverage antenna,

wherein the donor antenna comprises an antenna member having at least one element and a reflecting member surrounding the antenna member longitudinally.

2. The antenna system according to claim 1, wherein the reflecting member is disposed on a housing.
3. The antenna system according to claim 1, further comprising a reflecting shield mounted between the donor antenna and the coverage antenna on the transmission tower.
4. The antenna system according to claim 3, wherein at least one side of the reflecting shield is coated with a reflective material.

5. The antenna system according to claim 1, wherein the transmission tower is a utility pole.

6. An antenna system comprising:

- (a) a first transmission tower;
- (b) a donor antenna mounted on the first transmission tower;
- (c) a second transmission tower;
- (d) a coverage antenna mounted on the second transmission tower;
- (e) a signal processing device mounted on one of the first and the second transmission towers;
- (f) a first cable connecting the donor antenna to the signal processing device; and
- (g) a second cable connecting the signal processing device to the coverage antenna,

wherein the donor antenna comprises an antenna member having at least one element and a reflecting member surrounding the antenna member longitudinally.

7. The antenna system according to claim 6, wherein the reflecting member surrounds the antenna member and not in contact therewith.

8. The antenna system according to claim 6, wherein one of the first and the second transmission towers is a utility pole.

9. The antenna system according to claim 6, wherein both of the first and the second transmission towers are utility poles.

10. An antenna system comprising:

(a) a transmission tower; and

(b) a donor antenna mounted on the transmission tower,

wherein the donor antenna comprises

an antenna member having at least one element and having  
a longitudinal axis, wherein the antenna member produces side  
lobes characterized by a size and an extent extending radially away  
from the longitudinal axis and forward and rear lobes characterized  
by a size and an extent along the longitudinal axis; and

a reflecting member surrounding the antenna member and  
not in contact therewith, wherein the reflecting member decreases  
the size and the extent of the side lobes and increases the size and  
the extent of the forward and rear lobes,

wherein the reflecting member is substantially continuous  
and extends along the longitudinal axis.

11. The antenna system of claim 10, further comprising a coverage antenna  
mounted on the transmission tower, wherein the coverage antenna is in communication  
with the donor antenna via a signal processing device mounted on the transmission tower.

12. The antenna system of claim 11, further comprising a reflecting shield  
mounted on the transmission tower at a location between the donor antenna and the  
coverage antenna.

13. The antenna system of claim 12, wherein at least one side of the reflecting shield is coated with a reflective material.

14. An antenna system comprising:

- (a) a transmission tower; and
- (b) a donor antenna mounted on the transmission tower, wherein the donor antenna comprises
  - an antenna member having at least one element and having a longitudinal axis, wherein the antenna member produces side lobes characterized by a size and an extent extending radially away from the longitudinal axis and forward and rear lobes characterized by a size and an extent along the longitudinal axis;
  - a reflecting member surrounding the antenna member longitudinally and not in contact therewith, wherein the reflecting member decreases the size and the extent of the side lobes and increases the size and the extent of the forward and rear lobes; and
  - a spacing member disposed between the antenna member and the reflecting member.

15. The antenna system of claim 14, further comprising a signal processing device mounted on the transmission tower, wherein the signal processing device is in communication with the donor antenna.

16. The antenna system of claim 15, further comprising a coverage antenna in communication with the signal processing device, wherein the coverage antenna is mounted on the transmission tower at a location below the donor antenna.

17. The antenna system of claim 16, further comprising a reflecting shield, wherein the reflecting shield is mounted on the transmission tower at a location between the donor antenna and the coverage antenna.

18. An antenna system comprising:

(a) a first transmission tower;

(b) a donor antenna mounted on the first transmission tower,

wherein the donor antenna comprises

an antenna member having at least one element and having a longitudinal axis, wherein the antenna member produces side lobes characterized by a size and an extent extending radially away from the longitudinal axis and forward and rear lobes characterized by a size and an extent along the longitudinal axis; and

a reflecting member surrounding the antenna member and not in contact therewith, wherein the reflecting member decreases the size and the extent of the side lobes and increases the size and the extent of the forward and rear lobes,

wherein the reflecting member is substantially continuous and extends along the longitudinal axis;

(c) a second transmission tower located near the first

transmission tower;

(d) a signal processing device mounted on one of the first and second transmission towers, wherein the signal processing device is in communication with the donor antenna; and

(e) a coverage antenna mounted on the second transmission tower, wherein the coverage antenna is in communication with the signal processing device.

19. The antenna system of claim 18, wherein one of the first and the second transmission towers is a utility pole.

20. The antenna system of claim 18, wherein the first and the second transmission towers are two adjacent utility poles.

21. The antenna system of claim 19, wherein the first and the second transmission towers are separated by at least one utility pole.